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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,538	04/23/2001	Robert T. Love	CE08613R	3907

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MOTOROLA, INC.  
1303 EAST ALGONQUIN ROAD  
IL01/3RD  
SCHAUMBURG, IL 60196

EXAMINER

EWART, JAMES D

ART UNIT	PAPER NUMBER
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2683

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DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/840,538

Applicant(s)

LOVE ET AL.

Examiner

James D Ewart

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-197 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_\_

***Response to Arguments***

1. Regarding the objection to the specification, applicants amendments have overcome the rejections, therefore the objections to the specification are withdrawn.

2. Applicant's arguments filed February 05, 2004 have been fully considered by the Examiner, but they are not persuasive. Applicant argues that Le Strat et al teaches selecting a transmission mode as opposed to scheduling transmission. Examiner interprets call set up (Column 1, Lines 58-60 and Column 4, Lines 39-40) and the selection of the transmission mode as part of scheduling data transmission.

***Election/Restrictions***

3. Newly submitted claim 12 and 13 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 12 includes determining a transmission rate based on channel conditions and a coherence time left in a fade cycle whereas the other claims are related to scheduling transmission.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 12 and 13 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 - 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Le Strat et al. (US Patent No. 6,134,220).

Referring to claim 1, Le Strat et al teaches a method for scheduling a plurality of mobile units for data transmission (Column 8, Lines 42-45), the method comprising the steps of: determining a plurality of mobile units (Column 8, Lines 42-45) that require data transmission (Column 4, Lines 39-40); determine power control feedback information for each mobile unit within the plurality of mobile units that require data transmission (Column 10, Lines 1-9); and scheduling the plurality of mobile units for data transmission based on their power control feedback information (Column 7, Lines 12-25).

Referring to claim 2, Le Strat et al further teaches the step of determining C/I information for each mobile unit within the plurality of mobile units and scheduling the plurality of mobile units additionally based on C/I (Column 7, Lines 4-5).

Referring to claim 3, Le Strat et al further teaches wherein the step of scheduling the plurality of mobile units for data transmission comprises the step of scheduling the plurality of mobile units for data transmission over a common channel shared by the plurality of mobile units (Column 10, Lines 38-49 and Column 14, Lines 60-62). GSM uses TDMA wherein data transmission is achieved over a common channel shared by a plurality of mobile units.

Referring to claim 4, Le Strat et al further teaches wherein the step of determining C/I information for each mobile unit comprises the step of determining feedback information of a common channel (Column 6, Lines 15-17).

Referring to claim 5, Le Strat et al teaches an apparatus for scheduling mobile units for data transmission (Column 8, Lines 42-45), the apparatus comprising: a channel statistic estimator (Column 15, Lines 1-35), wherein the channel statistic estimator has power control information for a plurality of mobile units as an input (Column 7, Lines 6-11) and outputs a power-control statistic based on the power control information (Column 7, Lines 4-5); a scheduler having the power-control statistic as an input and outputting scheduled mobile units based on the power control statistic (Column 7, Lines 12-25).

Referring to claim 6, Le Strat et al further teaches wherein the channel statistic estimator additionally has C/I feedback information for the plurality of mobile units as an

input and outputs a statistic based on both power control and C/I information for each mobile unit (Column 15, Lines 1-35).

Referring to claim 7, Le Strat et al further teaches wherein the C/I information is C/I feedback information for a common channel shared by the plurality of mobile units (Column 10, Lines 38-49 and Column 14, Lines 60-62). GSM uses TDMA wherein data transmission is achieved over a common channel shared by a plurality of mobile units.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (US Patent No. 6,335,922) and further in view of Mandyam (U.S. Patent Publication No. 2001/0029189).

Referring to claim 8, Tiedemann, Jr. et al. teaches a method for scheduling a plurality of mobile units for data transmission (Column 4, Lines 39-41), the method comprising the steps of: determining a plurality of mobile units (Column 6, Lines 28-33) that require data

transmission (Column 4, Lines 39-41); determining transmission priority factors for each of the plurality of mobile units that require data transmission (Column 36, Lines 28-33); determining a priority metric based on a time a packet is queued for each of the plurality of mobile units that require data transmission (Column 38, Lines 1-15); selecting, based on the fading metric and the priority metric, a mobile unit from the plurality of mobile units that require data transmission (Column 36, Lines 23-25); and transmitting a packet to the mobile unit selected (Column 6, Lines 28-33), but does teach determining a fading metric.

Mandyam teaches determining a fading metric (0017 and 0020). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Tiedemann, Jr. et al. with the teaching of Mandyam of determining a fading metric to provide improved communication quality (0014).

Regarding claim 10, Mandyam further teaches wherein the fading metric is based on an accumulation of power control commands (0020).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. and Mandyam and further in view of Tiedemann, Jr. et al. (U.S. Patent No. 6,396,867).

Regarding claim 9, Tiedemann, Jr. et al. and Mandyam teach the limitations of claim 9, but do not teach wherein the fading metric is based on a voltage gain setting of a forward dedicated channel. Tiedemann, Jr. et al. (U.S. Patent No. 6,396,867) teaches wherein the fading metric is based on a voltage gain setting of a forward dedicated channel (Column 4,

Lines 41-54). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Tiedemann, Jr. et al. and Mandyam with the teaching of Tiedemann, Jr. et al. (U.S. Patent No. 6,396,867) wherein the fading metric is based on a voltage gain setting of a forward dedicated channel to improve the response time of the forward link power control (Column 4, Lines 43-49).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. and Mandyam and further in view of Olofsson et al. (U.S. Patent No. 6,167,031).

Regarding claim 11, Tiedemann, Jr. et al. and Mandyam teach the limitations of claim 11, but do not teach wherein the fading metric is based on measured C/I feedback. Olofsson et al. teaches wherein the fading metric is based on measured C/I feedback (Column 4, Lines 17-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Tiedemann, Jr. et al. and Mandyam with the teaching of Olofsson et al. wherein the fading metric is based on measured C/I feedback to improve the response time of the forward link power control (Column 4, Lines 55-57).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Strat et al and further in view of Tiedemann, Jr. et al. (US Patent No. 6,335,922).

Regarding claim 14, Le Strat et al teaches the limitations of claim 14 including generating a metric for each of the plurality of mobile units (Column 6, Lines 34-45) but does not teach selecting, based on the metric, a mobile unit; and transmitting a packet to the mobile unit selected. Tiedemann, Jr. et al. teaches selecting, based on the metric (Column 36, Lines 28-33), a mobile unit; and transmitting a packet to the mobile unit selected (Column 6, Lines 28-33). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Le Strat et al with the teaching of Tiedemann, Jr. et al. selecting, based on the metric, a mobile unit; and transmitting a packet to the mobile unit selected to provide a more efficient use of the forward link (Column 4, Lines 12-17).

Regarding claim 15, Tiedemann, Jr. et al. further teaches wherein the metric includes a priority metric based on a time a packet is queued (Column 38, Lines 1-15).

9. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Strat et al and further in view of Tiedemann, Jr. et al. (US Patent No. 6,396,867).

Regarding claim 16 and 18, Le Strat et al teaches the limitations of claim 16 and 18, but does not teach wherein the power control feedback is based on a voltage gain setting of a forward dedicated channel. Tiedemann, Jr. et al. teaches wherein the power control feedback is based on a voltage gain setting of a forward dedicated channel (Column 4, Lines 41-54). Therefore at the time the invention was made, it would have been obvious to a person of

ordinary skill in the art to combine the art of Le Strat et al with the teaching of Tiedemann, Jr. et al. wherein the power control feedback is based on a voltage gain setting of a forward dedicated channel to improve the response time of the forward link power control (Column 4, Lines 43-49).

10. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Strat et al and further in view of Mandyam.

Regarding claims 17 and 19, Le Strat et al teaches the limitations of claim 17 and 19, but does not teach wherein the power control feedback information comprises an accumulation of power control commands. Mandyam teaches wherein the power control feedback information comprises an accumulation of power control commands (0020). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of LKe Strat et al. with the teaching of Mandyam wherein the power control feedback information comprises an accumulation of power control commands to provide improved communication quality (0014).

### *Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Agrawal et al. U.S. Patent No. 6,108,316 discloses adaptive scheduling priorities based on battery power levels in wireless access protocols.

Bedekar et al. U.S. Patent No. 6,603,753 discloses down-link transmission inter-cell scheduling in CDMA data networks.

Dent U.S. Patent No. 5,345,598 discloses duplex power control system in a communications network.

Esmailzadeh et al. U.S. Patent Publication No. 2001/0000168 discloses transmission power control and apparatus for mobile communication system.

Ejzak et al. U.S. Patent No. 6,069,883 discloses code division multiple access system providing enhanced load and interference based demand assignment service to users.

Khaunte U.S. Patent No. 6,546,017 discloses technique for supporting tiers of traffic priority levels in a packet switched network.

Kim U.S. Patent No. 5,999,534 discloses method and apparatus for scheduling cells for use in a static priority scheduler.

Milliken et al. U.S. Patent No. 6,526,062 discloses systems and methods for scheduling and rescheduling the transmission of cell objects of different traffic types.

Walton et al. U.S. Patent No. 6,493,331 discloses method and apparatus for controlling transmissions of a communications systems.

Yoshida et al. U.S. Patent No. 5,687,162 discloses DS/CDMA receiver having an interface canceling function capable of assuring a desired reception quality in a narrow band DS/CDMA.

Ericsson. N.C. Global Telecommunications Conference 1999 discloses Adaptive modulation and scheduling for fading channels.

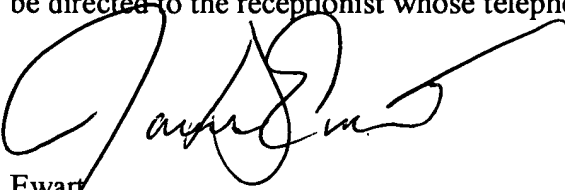
12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D Ewart whose telephone number is (703) 305-4826. The examiner can normally be reached on M-F 7am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703)308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



Ewart  
March 2, 2004



WILLIAM TROST  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600